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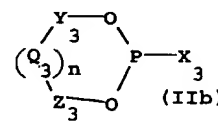
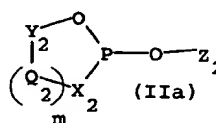
97-532722/49 E17 (E11) MITU 96.03.28
 MITSUBISHI CHEM CORP *JP 09255610-A
 96.03.28 96JP-074000 (97.09.30) C07C 47/02, B01J 31/04, 31/22,
 31/28, 31/30, C07C 45/50 // C07B 61/00
High selectivity production of aldehyde(s) using hydroformylation reaction - comprises reacting olefin(s) with carbon monoxide and hydrogen in presence of catalysts containing metals of group eight and cyclic phosphonite compounds
 C97-169996

Production of aldehydes (I) using a hydroformylation reaction comprises reacting olefin compounds with carbon monoxide and hydrogen in the presence of catalysts containing metals of the eighth group, and tri-valent organic phosphorus compound of cyclic phosphonite compounds.

MORE SPECIFICALLY

The cyclic phosphonite compounds are e.g. of formula (IIa) or (IIb).

E(10-D1C) N(2, 5-D, 5-E1)



X₂, Y₂ = optionally substituted di-valent hydrocarbon group;
 Q₂, Q₃ = optionally substituted methylene;
 m, n = 0, 1 or more; and
 X₃, Y₃, Z₂, Z₃ = optionally substituted hydrocarbon group.

ADVANTAGE

(I) can be prepared with high selectivity and less reduction of the olefin compounds.

PREFERRED MATERIALS

The olefin compounds are ethylene, propylene, butene, butadiene,

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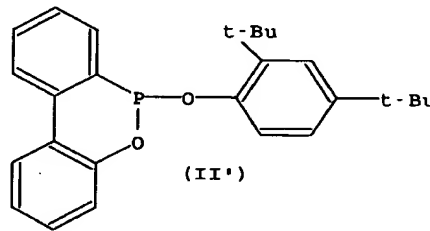
and/or pentene. The group 8 metal is Rh.

EXAMPLE

Propylene (4.50 g) was reacted with H₂/CO gas at 70 °C for 10.0 hours in the presence of carbonyl complex compound of formula (IV) (39.4 g), and phosphonite compound of formula (II') (1.0 mole per mole of Rh) to give 100% aldehyde. (MHG)



COD = cyclooctadiene.



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